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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,542	12/12/2003	Jac Gark Choi	51876P209C	9698

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EXAMINER

VO, TUNG T

ART UNIT	PAPER NUMBER
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2621

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/734,542

Applicant(s)

CHOI ET AL.

Examiner

Tung Vo

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/12/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-7 are rejected on the ground of nonstatutory double patenting over claims 1-6 of U. S. Patent No. 6,707,851 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: a video object segmentation method applicable to a video system, comprising the steps of: a) primarily segmenting objects existing in a frame of a video sequence manually or semi-manually; and b) automatically segmenting the objects within a video sequence including the primarily segmented object c) determining whether any scene change is made between consecutive frames or any new object other than the primarily segmented object appears within

Art Unit: 2621

the video sequence being automatically segmented, when repeatedly performing the step b) for consecutive frames; and d) repeatedly performing the first step, if the answer of the step of determining is positive (see claims 1 and 2 of the application and claim 1 of the Patent), e) examining the quality of automatically segmented results, if there is no scene change between consecutive frames and any new object other than the primarily segmented object does not appear within the video sequence being automatically segmented; f) performing the second step, if the quality of automatically segmented results is satisfactory; and g) repeatedly performing the first step, if the quality of automatically segmented results is not satisfactory, wherein the first step of primarily segmentation is made by segmenting the objects within the frame in completely manual using an user interface tool; wherein the first step of primarily segmentation is made by segmenting the object within the frame in semi-manual, such that, if the user designates manually a rough boundary line of the object within the frame, then the object within the frame is automatically segmented based on the designation-related information and an image segmentation information; wherein the second step of automatically segmentation comprises the step of: tracking the object region in the current frame to which the primarily segmented video object in the previous frame is moved, so as to segment the object within the frame of the consecutive frames; wherein the image segmentation information is a spatial information including a brightness information and a color information.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US 6,400,831).

Re claim 1, Lee teaches a video object segmentation method applicable to a video system, comprising the steps of: a) primarily segmenting objects existing in a frame of a video sequence manually or semi-manually (Fig. 1); and b) automatically segmenting the objects within a video sequence including the primarily segmented object (108 of fig. 2; col. 4, lines 6-8, Note objects are identified according to a semantic basis and there movement tracked throughout video frames).

Re claim 2, Lee further discloses the steps of: c) determining whether any scene change is made between consecutive frames or any new object other than the primarily segmented object appears within the video sequence being automatically segmented, when repeatedly performing the step b) for consecutive frames (Col. 4, lines 11-17; Note Global motion estimation is used to provide a very complete motion description for scene change from frame to frame, and is employed to track object motion during unsupervised processing); and d) repeatedly performing

Art Unit: 2621

the first step, if the answer of the step of determining is positive (Note I frame is detected, which inherently means a new scene in a video sequence and the system repeatedly segments video objects (fig. 2) in the video sequence; col. 3, lines 49-51, Note automatic processing is repeated for subsequent video frames).

Re claim 3, Lee further discloses the steps of: e) examining the quality of automatically segmented results (100 of fig. 1), if there is no scene change between consecutive frames and any new object other than the primarily segmented object does not appear within the video sequence being automatically segmented (col. 6, line 60-col. 7, line 12); f) performing the second step, if the quality of automatically segmented results is satisfactory (116 and 118 of fig. 2, F0 and F1 are compared to produce a video object V0); and g) repeatedly performing the first step, if the quality of automatically segmented results is not satisfactory (col. 7, lines 12-36).

Re claim 4, Lee further discloses wherein the first step of primarily segmentation is made by segmenting the objects within the frame in completely manual using an user interface tool (figs. 1 and 2; col. 5, lines 40-67).

Re claim 5, Lee further discloses wherein the first step of primarily segmentation is made by segmenting the object within the frame in semi-manual, such that, if the user designates manually a rough boundary line of the object within the frame, then the object within the frame is automatically segmented based on the designation-related information and an image segmentation information (fig. 1; col. 3, lines 52-64).

Re claim 6, Lee further discloses wherein the second step of automatically segmentation comprises the step of: tracking the object region in the current frame to which the primarily

segmented video object in the previous frame is moved, so as to segment the object within the frame of the consecutive frames (col. 3, lines 60-63).

Re claim 7, Lee further discloses wherein the image segmentation information is a spatial information including a brightness information and a color information (gray-scale and color; figs. 6, 12, and 13).

5. Claims 1 and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Courtney (US 5,969,755).

Re claim 1, Courtney discloses a video object segmentation method applicable to a video system, comprising the steps of: a) primarily segmenting objects existing in a frame of a video sequence manually or semi-manually (21 of fig. 5); and b) automatically segmenting the objects within a video sequence including the primarily segmented object (22 of fig. 5).

Re claim 4, Courtney further discloses wherein the first step of primarily segmentation is made by segmenting the objects within the frame in completely manual using an user interface tool (28 of fig. 5).

Re claim 5, Courtney further discloses wherein the first step of primarily segmentation is made by segmenting the object within the frame in semi-manual, such that, if the user designates manually a rough boundary line of the object within the frame, then the object within the frame is automatically segmented based on the designation-related information and an image segmentation information (fig. 4, Note video data, motion segment (boundary of the object), motion graph, see also fig. 7)).

Art Unit: 2621

Re claim 6, Courtney further discloses wherein the second step of automatically segmentation comprises the step of: tracking the object region in the current frame to which the primarily segmented video object in the previous frame is moved, so as to segment the object within the frame of the consecutive frames (fig. 3).

Re claim 7, Lee further discloses wherein the image segmentation information is a spatial information including a brightness information and a color information (figs. 3, 4, 6, and 7).

6. Claims 1-2, and 4-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Hampapur et al. (US 6,738,100).

Re claim 1, Hampapur discloses a video object segmentation method applicable to a video system, comprising the steps of: a) primarily segmenting objects existing in a frame of a video sequence manually or semi-manually (fig. 2, Note see USER QUERY INTERACTION of fig. 1); and b) automatically segmenting the objects within a video sequence including the primarily segmented object (figs. 9 and 10, Note objects within a video sequence (120 and 126 of fig. 2)).

Re claim 2, Hampapur further discloses the steps of: c) determining whether any scene change is made between consecutive frames or any new object other than the primarily segmented object appears within the video sequence being automatically segmented, when repeatedly performing the step (col. 3, lines 32-49); b) for consecutive frames (fig. 2); and d) repeatedly performing the first step, if the answer of the step of determining is positive (col. 3, lines 21-25, Note the two stage process is then repeated to identify additional keyframes until the

end of the video. If a particular frame does not exceed either the first or second threshold, the next frame, after a user-selectable time delta, is processed).

Re claim 4, Hampapur further discloses wherein the first step of primarily segmentation is made by segmenting the objects within the frame in completely manual using an user interface tool (USER QUERY INTERACTION of fig. 1).

Re claim 5, Hampapur further discloses wherein the first step of primarily segmentation is made by segmenting the object within the frame in semi-manual, such that, if the user designates manually a rough boundary line of the object within the frame, then the object within the frame is automatically segmented based on the designation-related information and an image segmentation information (5.5 of fig. 7, Note edge image; fig. 8).

Re claim 6, Hampapur further discloses wherein the second step of automatically segmentation comprises the step of: tracking the object region in the current frame to which the primarily segmented video object in the previous frame is moved, so as to segment the object within the frame of the consecutive frames (fig. 8).

Re claim 7, Hampapur further discloses wherein the image segmentation information is a spatial information including a brightness information and a color information (fig. 6).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kumar et al. (US 6,230,162) discloses progressive interleaved delivery of interactive descriptions and renders for electronic publishing of merchandise.


Art Unit: 2621

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Tung Vo
Primary Examiner
Art Unit 2621